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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/219,195	12/21/98	LEE	F SA997115

WM51/1103

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EXAMINER

ALTMAN, F

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 11/03/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/219,195

Applicant(s)

LEE ET AL.

Examiner

Franklin D. Altman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 10 October 2000 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of the Invention of claims 14-37 in Paper No. 6 is acknowledged. Accordingly, the cancellation of claims 1-13 drawn to a non-elected invention is acknowledged.

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 10/10/2000 have been approved.

Response to Amendment

Claim Objections

Amended Claims 30 and 37 continue to be objected to because of the following informalities: Line 2 of claim 30 and line 2 of claim 37 have a misspelling "orthognally" which should pronounce the 3rd "o" to be corrected to - -orthogonally- -. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 21 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Yan (U.S. Patent 6,025,988).

As per claim 21:

Yan discloses an assembly (10) comprising:

A first device (18);

A second device (36) having electrically conductive paths (14); and

An interconnect device (46) coupled between said first (18) and second (36) devices to route one or more signals between said first device (18) and said electrically conductive paths (14).

As per claim 40:

Yan additionally discloses wherein said electrically conducting paths (14) are attached to said second device (36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 14-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al (U.S. Patent 5,862,010) in view of Yan.

As per claim 14:

Simmons et al discloses a suspension assembly (80) comprising:

A slider/head assembly (30);

A suspension (32) having electrically conductive paths (conductive lines of 120); and

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Coupling between said suspension (32) and said slider/head assembly (30) to route one or more data signals between said electrically conductive paths (120) and said slider/head assembly (30).

But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

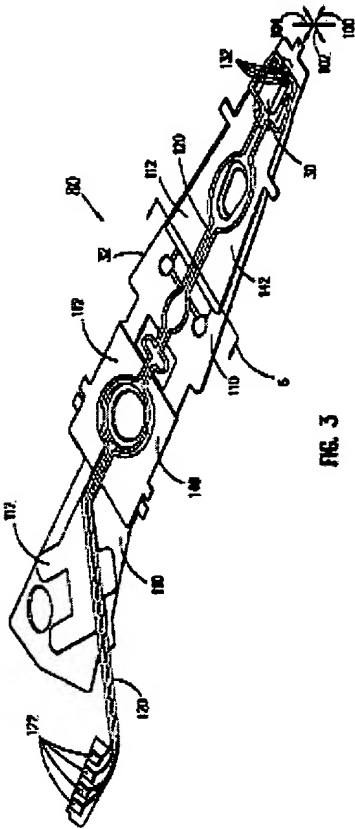
As per claims 15, 19, 25, 28, 32 and 35:

Simmons et al's suspension (32) is an integrated lead suspension (32).

As per claim 16, 29, 33 and 36:

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown on the following page.

SIMMONS ET AL'S FIGURE 3



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As per claim 17, 30 and 37:

Simmons et al's slider/head assembly (30) is orthogonally mounted onto said suspension (32).

See Simmons et al's Figure 3 shown on the previous page.

As per claim 18:

Simmons et al discloses a suspension assembly (80) comprising:

A slider/head assembly (30);

A suspension (32) having electrically conductive paths (conductive lines of 120); and

A microactuator ("microactuator", see column 6, line 32);

Coupling between the suspension (32) and said microactuator ("microactuator", see column 6, line 32) to route one or more signals between said electrically conductive paths (120) and said microactuator ("microactuator", see column 6, line 32).

But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 20:

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Simmons et al's suspension (32) includes a first set of termination leads (132) coupled to a slider/head assembly (30) and a second set of termination leads (122) for coupling, but lacks an explicit teaching of an interconnect module.

However, Yan discloses an interconnect module (46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 21:

Simmons et al discloses an assembly (80) comprising:

A first device (30 or "microactuator", see column 6, line 32);

A second device (32) having electrically conductive paths (conductive lines of 120); and

Coupling between said first (30 or "microactuator", see column 6, line 32) and second (32) devices to route one or more signals between said first device (30 or "microactuator", see column 6, line 32) and said electrically conductive paths (120).

But lacks an explicit teaching of:

An interconnect device for coupling.

However, Yan discloses an interconnect device (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been

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motivated to enable “The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.”, column 5, lines 54-58 of Yan.

As per claim 22:

Simmons et al discloses the first device (30) is a slider/head assembly (30) and said second device (32) is a suspension (32);

As per claim 23:

Simmons et al discloses the first device (“microactuator”, see column 6, line 32) is a microactuator (“microactuator”, see column 6, line 32) and said second device (32) is a suspension (32).

As per claim 24:

Simmons et al discloses a storage device (10) comprising:

A disk (12);

A spindle motor (14) positioned to support and rotate said disk (12);

A suspension assembly (80) including coupling between a slider/head assembly (30) and a suspension (32), said suspension having electrically conductive paths (120) and routing one or more data signals between said electrically conductive paths (120) and said slider/head assembly (30); and

An actuator (142) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations. See column 4, lines 5-9.

Simmons et al lack an explicit teaching of an interconnect module for coupling and routing.

However, Yan discloses an interconnect module (46) for coupling and routing.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 26:

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown on previous page 6 of this office action.

As per claim 27:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons system (10) is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al's test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and

A test platform (10) including a suspension assembly (80) coupled to an actuator (142), said actuator (142) operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for said test operation (read/write operation), said suspension assembly (80) including coupling between a slider/head assembly (30) and a suspension (32) having electrically conductive paths (120) and routing one or more data signals between said suspension (32) and said slider/head assembly (30).

As per claim 31:

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Simmons et al discloses:

A disk (12);

A spindle motor (16) positioned to support and rotate said disk (12);

A suspension assembly (80) including a coupling between a suspension (32) having electrically conductive paths and a microactuator ("microactuator", see column 6, line 32) to route data signals between said electrically conductive paths and said microactuator ("microactuator", see column 6, line 32); and

An actuator (includes 42) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations,

But lacks an explicit teaching of

An interconnect module for coupling.

However, Yan discloses an interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 34:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons disk drive is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al's test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and
A test platform (10) including a suspension assembly (80) coupled to an actuator (includes 42),
said actuator (includes 42) operable to position said suspension assembly (80) above said disk
(12) to access said disk (12) for said test operation (read/write operation), said suspension
assembly (80) including coupling between a suspension (32) and a microactuator
("microactuator", see column 6, line 32) to route one or more data signals between said
suspension (32) and said microactuator ("microactuator", see column 6, line 32).

Simmons et al lack an explicit teaching of an interconnect module for coupling and routing.
However, Yan discloses an interconnect module for coupling and routing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made
to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths
of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been
motivated to enable "The pad set 46 placement can vary in configuration as needed according to
the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claims 38-43, Simmons et al additionally discloses wherein said electrically conducting
paths (120) are attached to said suspension (32).

Response to Arguments

Applicant's arguments with respect to claims 1-17, 21, 22, and 24-33 have been
considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 10/10/2000 with respect to claims 18-20, 23 and 34-43 have been fully considered but they are not persuasive. Applicant asserts that Simmons et al' data storage system 10 is not a test platform. Examiner appreciates the apparent agreement of Applicant with the test capabilities of Simmons et al' data storage system 10 discussed in the last office action of record. Applicant now asserts that "Thus, Simmons fails to show a platform in general.", page 10 of Applicants response. Merriam Webster's Collegiate Dictionary, 10th edition, © 1997, on page 891 provides multiple definitions of platform. The definition which most broadly applies in this instance is (2), "a device or structure incorporating or providing a platform [1: design or plan]" Inherently, Simmons et al is within the scope of a platform as herein defined as Simmons et al' device is made of structures which both incorporate a design and provide a plan.

Applicant asserts "neither Simmons nor Yan teaches the interconnect of claim 23". Yan does disclose pad set 46 which is obviously an interconnect. "The interconnect adapter 14, including the amplifier circuit 44 and pad set 46 are removably affixed....", column 6, lines 13-15.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Riedlin, Jr. (U.S. Patent 6,125,014) discloses interconnect traces between bond pads and a transducer coil of a magnetic head slider. Pattanaik et al (U.S. Patent 6,046,882) discloses electrical connection between a head transducer and an electrical lead. Arisaka et al (U.S. Patent 5,930,082) discloses electrical connections within a magnetic head support device.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

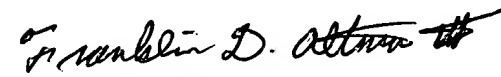
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

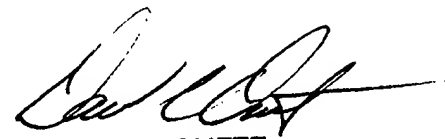
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Franklin D. Altman whose telephone number is (703) 305-7494. The examiner can normally be reached on mon-fri, 6:30 am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached at (703) 305-9687.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-9051 for formal communications or (703) 305-7201 for informal communications, which should be so designated.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Franklin D. Altman, III


DAVID L. OMETZ
PRIMARY EXAMINER